



OHSP SAFETY BELT OBSERVATION SURVEYS IN MICHIGAN

Timothy J. Gates, Ph.D., P.E.
Associate Professor
Department of Civil and Environmental Engineering
Michigan State University



1

Safety Belt Statistics

- During a crash, safety belts reduce risk of severe injuries and fatalities by 45% – 60%
- Safety belt use rates (front seat only):
 - Nationwide ~ 87%
 - Primary Law States ~ 91%
 - Secondary Law States ~ 80%
 - Michigan ~ 92% – 94%



OHSP Safety Belt Survey

- Develop methodology in accordance with NHTSA uniform criteria
- Provide training to all staff conducting surveys and data entry
- Conduct observational surveys
 - Post–Click It or Ticket (Two weeks after Memorial Day)
 - Annual Survey – (Two weeks after Labor Day)
- Summarize and analyze data, track trends, identify problem areas, report data

3

Counties and Sites

- NHTSA Rule (2011)
 - County sample frame must represent at least 85% of the passenger vehicle fatalities (5-year average) according to FARS
- 40 (of 83) counties comprised sample frame
- 200 sites selected from 33 counties
 - Primary roads (freeways)
 - Secondary roads (arterials/collectors)
 - Local roads (farm roads/neighborhood streets)
- 4 Strata based on prior belt use (50 sites per)

33 Counties

Stratum 1

Ingham
Washtenaw
Kalamazoo
Oakland

Stratum 2

Allegan
Bay
Calhoun
Eaton
Grand Traverse
Jackson
Kent
Livingston
Monroe
Midland
Ottawa

Stratum 3

Berrien
Branch
Clare
Clinton
Genesee
Ionia
Isabella
Lapeer
Lenawee
Montcalm
Muskegon
Newaygo
Saginaw
Sanilac
Shiawassee
St. Clair
St. Joseph
Van Buren

Stratum 4

Wayne
Macomb



Figure: 33-County Statewide Sample

5

Training

- Staff is hired and trained for several weeks leading up to survey
- Classroom training
- Field training
- QA/QC checks

Observational Survey

- Daylight hours
 - 7 am to 6 pm
- Every day of the week
 - Sunday through Saturday
- Includes all passenger vehicles and commercial vehicles < 10,000 lbs.
- Includes drivers and front seat passengers
 - Belted, not belted, or unknown belt-use
 - Mobile device use (drivers only)



7

Data Collection Procedure

- Collect data during the assigned hour
 - Intersections or freeway exit ramps
 - Locate safe place to observe approximately 50-150 feet upstream of signal or stop sign
- Observe vehicles for 60 minutes
 - Safety belt and cell phone use
 - Age, gender, and ethnicity
 - Vehicle type
 - Traffic volume count
- Typically 25,000 – 35,000 observations!

8

Belted Correctly vs. NOT Belted Correctly



9

Cell Phone Use

- Handheld (Talking):



- Handheld (Typing):



- Hands Free:



2015 Findings – Michigan Safety Belt Use Rates

- 2015 MI Safety Belt Use Rate: **92.8%** (steady)
- By Vehicle Type
 - Minivan/SUV highest (94.5%)
 - Pickups lowest (89.7%)
- By Gender
 - Females highest (94.3%)
 - Males lowest (92.6%)
- By Age
 - 30-59 highest (94.4%)
 - <30 lowest (92.2%)
- By Race
 - Caucasian highest (93.8%)
 - African American lowest (89.6%)
- **Lowest Safety Belt Use Rates (Highest Risk)**
 - **Young African American Males (<30)**
 - **Young Males (<30) in Pick-up Trucks**

2015 Findings – Michigan Mobile Device Use

- 2015 MI mobile device use (weighted): 8.4%

TOTAL (Weighted)	TALKING (Handheld)	TALKING (Handsfree)	TYPING
8.4%	5.0%	0.4%	2.4%

- Younger drivers more likely to use mobile device than older drivers

TOTAL (Weighted)	<30 yrs	30-59 yrs	>60 yrs
8.4%	11.6%	7.5%	2.5%

Other MI Restraint Surveys – Commercial Vehicles (2015)

- CMV Safety Belt Use: 81% (down slightly)
- Lowest Among Short-Haul/Local, Especially Construction/Industrial Trucks:
 - Cement mixers (29.8%)
 - Dump trucks (70.1%)
 - Gravel trains (66.3%)
 - Garbage trucks (75.0%)
- Mobile Device Use: 7.4% (Typing: 1.3%)

Other MI Restraint Surveys – Child Restraint Devices

- CRD use rates
 - 0-3 yrs: 95.7% (steady)
 - 4-7 yrs: 49.7% (improved since law enacted)
 - Use rates are correlated with driver belt use

■ CRD misuse rates

OVERALL (Weighted)	Rear Facing	Forward Facing	Booster
74.0%	81.1%	80.0%	60.0%

■ Common Issues

- Premature graduation into next seat type (~50% 1 yr olds)
- Harness retainer clip too low (~50%) and excessive slack
- Excessive recline

Other MI Restraint Surveys – Motorcycle Helmets

- Helmet use rates:
 - Before repeal of law (2006): 99.4%
 - After repeal of law (2013): 73.0%
 - Rate much lower at rallies (58.8%)
 - Over 60 yrs and females show highest rates
 - 60% nationwide (2012)
- 5.6% wear high visibility gear